

Proposal Reviews

#201: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

University of California, Davis

Initial Selection Panel Review

Research and Restoration Technical Panel Review

Sacramento Regional Review

External Scientific Review

#1

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Prior Performance/Next Phase Funding

Environmental Compliance

Budget

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

Proposal Number: 201

Applicant Organization: University of California, Davis

Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)

Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	-
In Part	-
With Conditions	-
Consider as Directed Action	-
Not Recommended	X

Amount: **\$0**

Conditions, if any, of approval (if there are no conditions, please put "None"):

None.

Provide a brief explanation of your rating:

The Selection Panel concurs with reviewers that the proposal has high technical merit and may provide data that could guide well-designed repatriation efforts. Nonetheless genetic issues in this species appear to be secondary to immediate threats from a wide array of other biotic and physical environmental factors. Those factors appropriately will continue to dominate species protection and recovery efforts. The panel points out that reestablishment of frog populations will need support of landowners, USFWS, and local entities; these significant details should be resolved prior to proceeding with the proposed effort. Given funding limitations and the narrow applicability of results from this proposed effort, the panel recommends not to fund.

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

Proposal Number: 201

Applicant Organization: University of California, Davis

Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;

Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	This is a very well designed and tightly integrated proposal that addresses clear and important goals in the conservation and restoration of the red-legged frog in California. The applicants have effectively combined molecular genetic analyses with field translocation experiments that will provide guidelines for restoration of this endangered species. This project would have been ranked superior except for two concerns. First, it is not clear whether access to sites for the translocation experiment have been clearly identified and secured. Second, although it is understandable that public access to experimental sites needs to be controlled, the panel felt that the public outreach portion of this project was not developed.
XAbove average	
-Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

The goal of this project to facilitate the repatriation of the red-legged frog to its original range are very clearly described and is a very important goal in the conservation and restoration of this species. The justification for the genetic analyses and the translocation studies are very well justified and are closely linked with each other. It is clear how results will be used to develop a restoration and management strategy for this species.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

The genetic approach was carefully and clearly described and is very feasible because of the proven track record of the applicants. Combining the molecular markers that describe the evolutionary context of the species distribution with the demographic analysis in the translocation experiments is an especially powerful approach. The robustness of the conclusions from the translocation experiments might be improved if 1) a better description of how the habitat structure in the potential translocation sites will be quantified and 2) if the demographic monitoring were extended longer into the life cycle.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

The applicants have a proven track record in successfully completing this type of study and have a solid publication record in peer-reviewed publications. There was some concern that the outreach component in this proposal was not developed in that public involvement was apparently discouraged.

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

Given the extent and sophistication of the genetic analyses and the amount of field research proposed, this is a very cost-effective proposal.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

The Sacramento Regional panel ranked this proposal Medium. The panel thought that this project focused on a very important species. However, the panel thought that the proposal would be strengthened by a clearer linkage with other projects on this species, a stronger dedication to public outreach, and better assurances that the sites for translocation experiments were accessible.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

Although it will not significantly impair the projects feasibility, the environmental compliance review noted that compliance with the FESA will require NEPA documentation

Miscellaneous comments:

None

Sacramento Regional Review:

Proposal Number: 201

Applicant Organization: University of California, Davis

Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

Overall Ranking: -Low ☒Medium -High

Provide a brief summary explanation of the committee's ranking:

This proposal addresses an at-risk species. However, the panel believes this proposal is premature and would be greatly strengthened by the following points: 1) Secure access to sampling sites 2) Address likelihood of potential benefits to Sacramento region 3) Link this project with other projects that are repatriating red-legged frogs (e.g. Section 7 applicants)

1. Is the project feasible based on local constraints?

-Yes ☒No

How?

Access to sample extant populations of red-legged frogs need to be secured for the proposed project to be feasible. On-going efforts to purchase private lands for sampling access would strengthen this proposal in future considerations.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

☒Yes -No

How?

This proposal involves at-risk species and applies to Strategic Goal #1 (listed species depends on waters within ERP area). However, potential repatriation sites are currently undetermined, which raises questions as to the project's direct applicability to the Sacramento region.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

-Yes ☒No

How?

No information provided in proposal.

4. Does the project adequately involve local people and institutions?

-Yes ☒No

How?

Public involvement is described as not advisable for this targeted research project.

Other Comments:

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **201**

Applicant Organization: **University of California, Davis**

Proposal Title: **Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	Very good--This proposal has high technical merit, despite some of questions raised.
X Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

Rating: Excellent. Repatriation of the California red-legged frog into extensions of its native range.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

Rating: Excellent. This proposal attempts to restore the habitat viability of an endangered species. The results may be relevant to understanding the genetic processes that underlie translocation of other endangered species.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

Rating: Very Good. 3 technical tasks plus project management are identified. Technical hypotheses are good. More detail would be beneficial to describe habitat fragmentation issues if habitats are not adjacent.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

Rating: Good. This proposal is feasible, but some uncertainties exist, such as access to private lands and obtaining the necessary permits.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Rating: Didn't find these addressed.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

Rating: Fair. It seems to me that a necessary component is public outreach, especially dealing with private landowners, etc. Applicant actually advises against public involvement.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Rating: Very Good. Investigator published in topic area. Could use a little more detail on experiences.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

Rating: No comment.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **201**

Applicant Organization: **University of California, Davis**

Proposal Title: **Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
X Excellent	The project is well documented, feasible and focused on a very important topic. The persons involved have the experience and the capacity to fulfill the tasks required. Except for some minor aspects there is no foreseen condition that could disqualify it.
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The study is focused on an important nature conservation and management topic. Although an ultimate solution, succesful repopulations can stop the decline of many species.

Unfortunately very little attention is given to this aspect and most translocations are done empirically. The case of the hybrid Florida panthers used for repopulation is well known. It is time to consider translocations as delicate matters that should not be left mostly for amateurs or non-govermental organizations.

Considering the global amphibian decline this project can provide extremely useful insights for the conservation and management of threatened species.

The project has a major drawback. It estimates only the survival rate of tadpoles until metamorphosis, but this can hardly be considered valid on medium or long term. The period is too short to assess the success/failure or evaluate the range of environmental problems that caused the extinctions of the native populations. I think that a survey in the third year of the subadults that survived during the winter might have added valuable insights. Overall, the value of the project will be greatly increased by a follow-up monitoring program.

Also, Task 2 seems similar with the work cited in the text of Shaffer et al. (in prep). Perhaps some details could clarify this aspect.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The project is consistent, well documented and justified. Both the model and the methods proposed are realistic and valuable, except for the extremely short time-scale (but this again is a flaw of the financing strategies everywhere). The paper of Schneider (2001, BioScience 51: 545) highlights the problems of scaling in biology and ecology and his comments are valid in this case also.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The proposal is well designed although the focus is biased towards genetic analysis. I consider that habitat assessment is extremely difficult to achieve during only one season. Assessing the presence of predatory fish (when stocking with fish fry still continues in some parts) and bullfrogs is not an easy task. Also, without some basic analyses of water quality and toxic chemicals (heavy metals and pesticides) in water, sediments, and nearby soils, no consistent results can be achieved. It is not clear how the project will interact with the USFWS on-going surveys or how this data (probably available) will be obtained and used in the habitat assessment procedure. Will the project be developed as part of the Recovery plan?

I don't think that the analyses of DNA from preserved specimens should be limited to UCL museum, since further samples can be made available from other museums. In Table 2, there are no samples from seven counties and only one individual in six others, only seven counties have more than one sample. The information gathered from the analysis of further individuals might prove extremely valuable.

I return again to Task 2 (page 10) since there is no estimate on the degree of sampling required for assessing potential donor populations (i.e. the number of populations and individuals within populations sampled and analysed). How broad will this survey be? What was done (and is already available) by Shaffer et al (in prep)?

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The proposal is well documented and has great chances of success. A possible delay can be caused by the search for microsatellites, but otherwise the time-table is very well-done.

One important aspect that is just mentioned is that (page 11) .. potential donor populations will be examined for disease ... All natural populations have a certain load of parasites and pathogens and germ-free spawn is almost impossible to obtain. How will this examination be done and what measures will be taken to avoid contamination (e.g. fungus infestation of eggs during manipulations)?

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The project consists of two components: genetic and environmental, but the second one is not quantified. It is thus difficult to assess the importance of the survey done and to appreciate the value of the selection procedure. The genetic component can be easily evaluated and the performance measures provided are sufficient.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The data and information provided by the genetic analysis (i.e. primers and sequences) are an important asset for further studies and other projects.

It is hard to estimate the usefulness of the information gathered after translocation due to the short time period, but the results might be surprisingly interesting (unpredictability is nature's predictable behavior).

The most important output of the project in my opinion is the solid, well-documented approach needed for repopulating. It might reduce the enthusiastic, amateur reintroduction programs that most often do more harm than good. Either successful or not, the results will be of great benefit to the scientific community and will help in developing successful protocols for restoration.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

There is no doubt that the genetic component will be successfully completed. I was already critical regarding the habitat assessment part (perhaps a bias due to the fact that I have done more field work than lab work), but if the project will be jointly developed with the USFWS for this part, there are no major flaws that could incapacitate it.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

There are several aspects in the budget proposal that are not fully justified: 1. In the first year 10,000 \$ are provided for a company that will develop the microsatellites needed for screening. It is not clear how long this will take since amphibian DNA is difficult to work with and this might take some time. In this case (i.e. no primers available) how will the screening be done (there are 1520 hrs)? The work of Shaffer et al. (in prep) is cited several times, without giving details on the genetic analyses done. 2. Why will the centrifuge be bought only in the second year? The same analyses will be done during both years. 3. The amount requested for travel in the first year for task 2 is too low for the area that must be covered.

Miscellaneous comments:

The applicant should be asked to provide details on the aspects previously highlighted and criticised. It would be a pity to underrate an excellent project because of minor aspects.

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: **201**

Applicant Organization: **University of California, Davis**

Proposal Title: **Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

Dr. May is an Adjunct Faculty member at my institution (UC- Davis).

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
X Excellent	Very well designed research project that addresses both basic and applied questions. Addresses a major concern about the importance of genetic variation in restoration research and practice.
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

1 - Excellent The goals are especially timely because the importance of genetic variation in translocation efforts and restoration, although poorly known, is becoming a major concern in all fields of restoration.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

2 - Very Good The hypotheses being tested are of both applied and basic interest and address a pressing need in translocation efforts.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

1 - Excellent Very clearly stated hypotheses and a very well planned design that uses an excellent combination of molecular techniques and field experiments.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

2 - Very Good

Very well designed experimental protocol that, although ambitious, should pose no real problem in execution. The development of a sufficient number of polymorphic microsats is not a trivial task so it would have been nice if the applicants had more fully addressed the possibility for cross-species amplification (assuming this has been done in other Rana species).

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

2 - Very Good Obtaining sufficiently variable microsats and publishing those sequences for use by others is a very concrete performance level. As might be expected from this type of research proposal the other main performance index is number of published papers (which seems reasonable).

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

3 - Good It would seem that the results obtained here would be of major interest by managers so a better description by the applicants of potential outreach efforts is needed. Given the importance of this information for management, I think the applicants need to do more than just attend meetings were managers might be present.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

1 - Excellent Lead P.I and his lab personnel are fully competent to execute this work. This lab has developed a solid track record in this area of research.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

1 - Excellent Given the wide scope of this research, the costs are very reasonable.

Miscellaneous comments:

Prior Performance/Next Phase Funding:

New Proposal Number: 201

New Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*
2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed Contract #11332-1-G005

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

☒Yes -No -N/A

If no, please explain any difficulties:

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

-Yes ☒No -N/A

If no, please explain any inaccuracies:

Dr. May discusses his current salmon related projects, but not his green sturgeon projects.

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

☒Yes -No -N/A

If no, please explain deficiencies:

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

☒Yes -No -N/A

If no, please explain deficiencies:

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

☒Yes -No -N/A

If no, please explain:

Other Comments:

Environmental Compliance:

Proposal Number: 201

Applicant Organization: University of California, Davis

Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

-Yes **X**No

If no, please explain:

Compliance with FESA requires NEPA documentation.

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

XYes -No

If no, please explain:

If funding and work scheduling are accounted for under the Project Management task.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

-Yes **X**No

If yes, please explain:

Other Comments:

Budget:

Proposal Number: 201

Applicant Organization: University of California, Davis

Proposal Title: Genetic potential of donor populations and genetic monitoring of the repatriation process for the threatened California red-legged frog

1. Does the proposal include a detailed budget for each year of requested support?

☒Yes ☐No

If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

☐Yes ☒No

If no, please explain:

Missing Tasks on Budget Summary.

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

☒Yes ☐No

If no, please explain:

4. Are appropriate project management costs clearly identified?

☒Yes ☐No

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

☒Yes ☐No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

6. Does the budget justification adequately explain major expenses?

☒Yes ☐No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes ☒No

If yes, please explain:

Other Comments: